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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Klaus M. Irion

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/994,178	Applicant(s) IRION ET AL.	
	Examiner YOGESH K. AGGARWAL	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-8,10-19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 6,7,10-12 and 16 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24 is/are allowed.
- 6) ☒ Claim(s) 1,4,8,13-15,17-19,21-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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1. Prosecution on the merits of this application is reopened on claim 2 considered unpatentable for the reasons indicated below: The indicated allowability of claim 2 is withdrawn in view of the reference(s) to Yabe (US Patent # 4,779,130). Rejections based on the newly cited reference(s) follow. Applicant is advised that the Notice of Allowance mailed is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

Claim Objections

2. Claim 15 should be dependent upon claim 14 in order to correct the antecedent basis for "said fourth section". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 8, 13-15, 17-19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yabe (US Patent # 4,779,130).

[Claim 1]

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Yabe discloses an image pick-up module, comprising:

an endoscope shaft having a longitudinal axis (Fig.2; column 3, lines 48-64; core tube 9 corresponds to the shaft; note longitudinal axis L);

an electronic image sensor having an image pick-up surface transverse to the longitudinal axis of said shaft (electronic image sensor 34);

a single-piece circuit board which is electrically bonded to said image sensor, said circuit board having at least three sections integrally connected with one another, with a first section and a second extend substantially in parallel one to the other and obliquely or crosswise to said image pick-up surface of said image sensor and a third section being arranged between the first and the second sections, said circuit board being folded from a planar board blank comprising at least said integrally formed first, second, and third sections, said third section of said blank being arranged between said first and second sections of said blank (single piece circuit board 35 electrically bonded to the sensor 34 having at least three integral sections (a top (first) section depicted with a two-lead component, a bottom (second) section depicted with a three-lead component and a right-hand (third) section, between the first and second sections, the top and bottom sections are shown as parallel with each other and crosswise to the image pickup surface of element 34),

at least one cable electrically bonded to said circuit board and leading away from said circuit board (cable 36, wires attached to circuit board 35);

wherein said image sensor is arranged on one end of said circuit board opposite said third section (the image sensor is located to the left of the circuit board, and the third section is on the right side, opposite the image sensor).

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Yabe does not disclose that said third section has a substantially V-shaped configuration. However, as is evident from Yabe, it is known in the art to fold circuit boards in endoscopes. The particular shape to which it is folded, including to have a section which has a substantially V-shaped configuration, would amount to a design variation of Yabe's invention that was within the capability of one of ordinary skill in the art in light of considerations such as the particular type, size or shape of the endoscope shaft within which the module is to be placed. This design feature further produces no unexpected results. The claimed invention could therefore have resulted from Yabe's invention in a predictable manner.

[Claim 4]

It would be obvious to have a V-shaped hybrid board that have a straight-line prolongation in Yabe as is evident from Yabe, it is known in the art to fold circuit boards in endoscopes. The particular shape to which it is folded, including to have a section which has a substantially V-shaped configuration, would amount to a design variation of Yabe's invention that was within the capability of one of ordinary skill in the art in light of considerations such as the particular type, size or shape of the endoscope shaft within which the module is to be placed.

[Claims 8 and 18]

Yabe teaches at least one cable (shown on the right side with three leads) electrically bonded to an outside surface of said circuit board leading away from said circuit board.

[Claim 13]

Yabe discloses wherein an interior of said circuit board is filled with epoxy or silicone. However Official Notice is taken of the fact that it is very common to have an adhesive that is electrically non-conductive, filling compound like epoxy resin. Therefore taking the combined teachings of

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Yabe and Official Notice, it would be obvious to one skilled in the art at the time of the invention to have been motivated to have an adhesive that is electrically non-conductive, filling compound like epoxy resin in order to have high heat conductivity, which makes the temperature distribution uniform at the time of cure, so that the necessity of stepwise heating is eliminated at the time of cure and the procedure of curing is made easier to practice.

[Claims 14, 15, 17]

Yabe discloses in figure 2 a left hand section on the left side to accommodate the imager 34 and having a space to accommodate the image sensor and is read as a recess. The imager is read as an electric component contained in the circuit board.

[Claim 19]

Yabe would inherently have at least one electric circuit board conductor for electrically connecting first and second section since the whole of the circuit board is integral.

[Claim 21]

Yabe discloses different sections of single piece circuit board 35 electrically bonded to the sensor 34 having at least three integral sections (a top (first) section depicted with a two-lead component, a bottom (second) section depicted with a three-lead component and a right-hand (third) section, between the first and second sections, the top and bottom sections are shown as parallel with each other and crosswise to the image pickup surface of element 34. Yabe also discloses having a first and second section having cable attached and a third section connected to the first and second section which are flexible cable electrically bonded to an outside surface of said circuit board leading away from said circuit board (cable 36 as shown in figure 2, wires attached to circuit board 35).

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[Claims 22]

This is a method claim corresponding to apparatus claims 1 and 21. Therefore claim 22 is analyzed and rejected based upon apparatus claims 1 and 21 respectively.

[Claim 23]

See Examiner's notes regarding Claim 13.

Allowable Subject Matter

5. Claim 24 is allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOGESH K. AGGARWAL whose telephone number is (571)272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YKA

February 23, 2009

/Sinh N Tran/

Supervisory Patent Examiner, Art Unit 2622